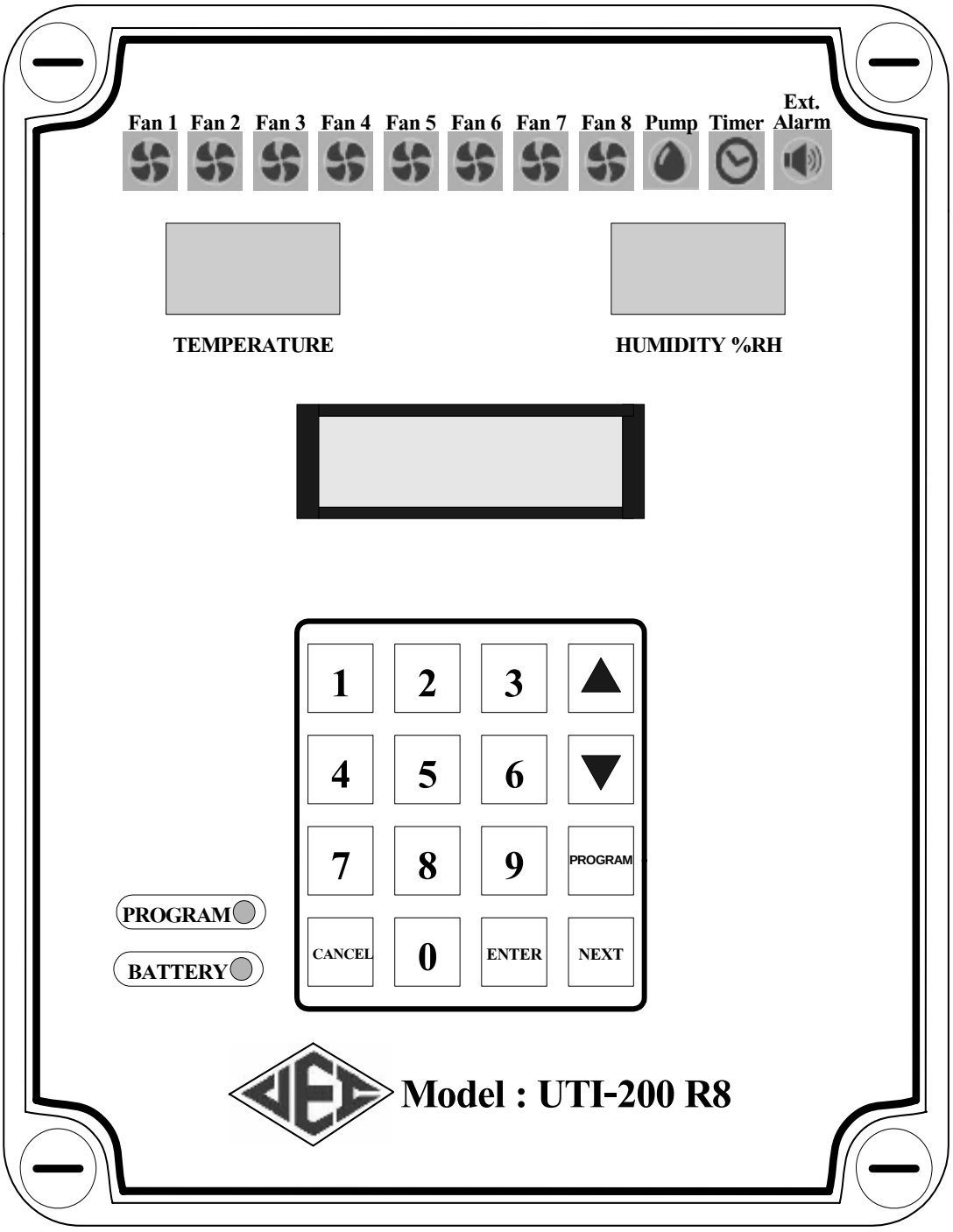

UTI-200R8 USER'S MANUAL (V2.0)

HuTek (Asia) Co., Ltd.
91 Soi Akkaphat (Thonglor 17), Vadhana, Bangkok 10110 THAILAND
T: +662 185 2831-4 F: +662 712 6098 E-mail: info@hutek-asia.com
Web site: http://www.hutek-asia.com

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Components

1.	Temperature Sensor	2	sets
2.	Humidity Sensor	1	set
3.	UTI-200R8 control box with built-in battery back up	1	set

General Specifications

- Temperature display in ^{o}C or ^{o}F ,Relative Humidity in % RH
- Operating range 0-70 ^{o}C, 25-99%RH
- Two-line LCD display
- Real time display for Temperature, Humidity and Heat Stress Index
- Calibration program for temperature sensor, humidity sensor, and time/date
- "self-test" program for all relays and ports
- 8-channel for fan controller
    - Mode Fan 1-4 Temperature and timer control (pulse mode)
    - Mode Fan 5-8 Temperature and heat-stress Index control (HSI)
    - Optional Heating control by selecting Fan 8 in Heater mode
    - Optional T-curve program. Can vary setting up to 8 Rearing stages from age 0 to 999 days
- 1 Channel for cooling: Controlling by temperature, humidity and timer (pulse mode)
- 1 channel for timer: On/Off, 8 steps per day used for lighting or sprinkler
- Alarm system running on built-in rechargeable battery (12VDC 1.3AH). Can be set for low temperature alarm, high temperature alarm, heat stress alarm, disconnected sensor, and power failure.
- Password Enable (default password "2519")
- Failed-safe system. In case of any mal-function, the unit will trigger the alarm and automatically switch on Fan 1. "STANDBY" or "AUTO" mode
- Can set ID and Description for each individual units (for optional centralized computer control)
- Data Upload/Download to and from different units
- Built-in memory for data recorder up to 14 days (672 records) can be displayed in LCD panel and printed out
- Centralized computer control can control up to 100 houses (optional programming and accessories sold separately)

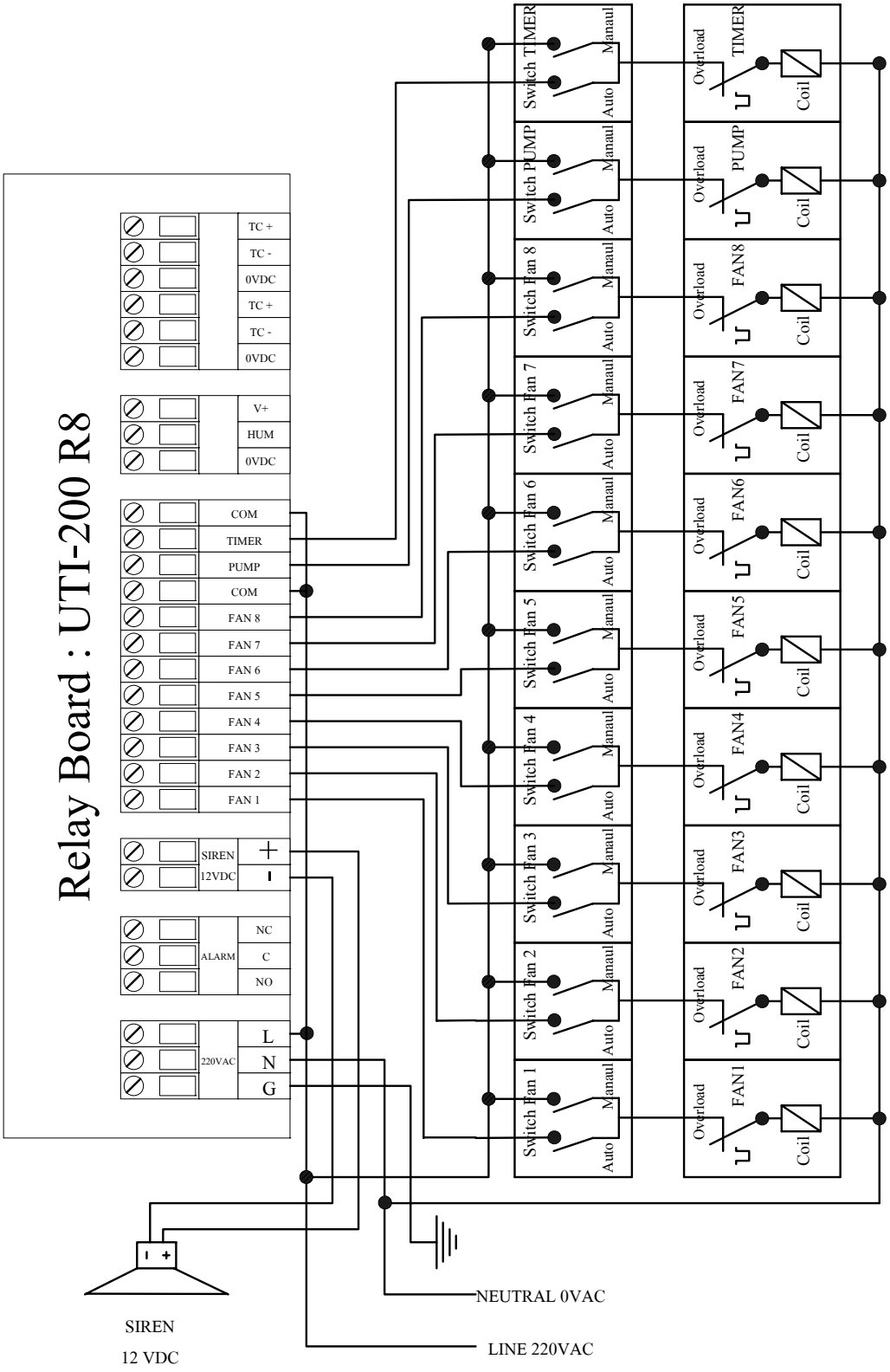
Technical Specifications

Casing	IP56	
Electrical	Voltage	220 VAC
	Frequency	50 Hz
	Power	20 W
	Fuse	250 VAC, 500 ma fast blow
Temperature Sensors	Operating range	0-70 ^{o}C
	Display digit	0.1 ^{o}C
	Accuracy	$\pm$1.0 ^{o}C
Humidity Sensor	Operating range	25-99 %RH
	Display digit	0.1 %RH
	Accuracy	$\pm$5 %RH
Output for Fan	Output relay contact	8 outputs 220VAC, 5A
	Fuse	250 VAC, 4A fast blow
	Control Mode	1-4: Temperature/ Pulse
		5-8: Temperature/Heat Stress
Output for Cooling	Output relay contact	1 output 220VAC, 5A
	Fuse	250 VAC, 4A fast blow
	Control Mode	Temperature/Humidity/Pulse
Output for Timer	Output relay contact	1 output 220VAC, 5A
	Fuse	250 VAC, 4A fast blow
	Control Mode	8 steps On/Off per day
Output for Alarm	Output relay contact	250 VAC, 5A
	Fuse	250 VAC, 4A fast blow
	Control Mode	Low/High Temp.
		Heat Stress
		Power failure
		Equipment Mal-function

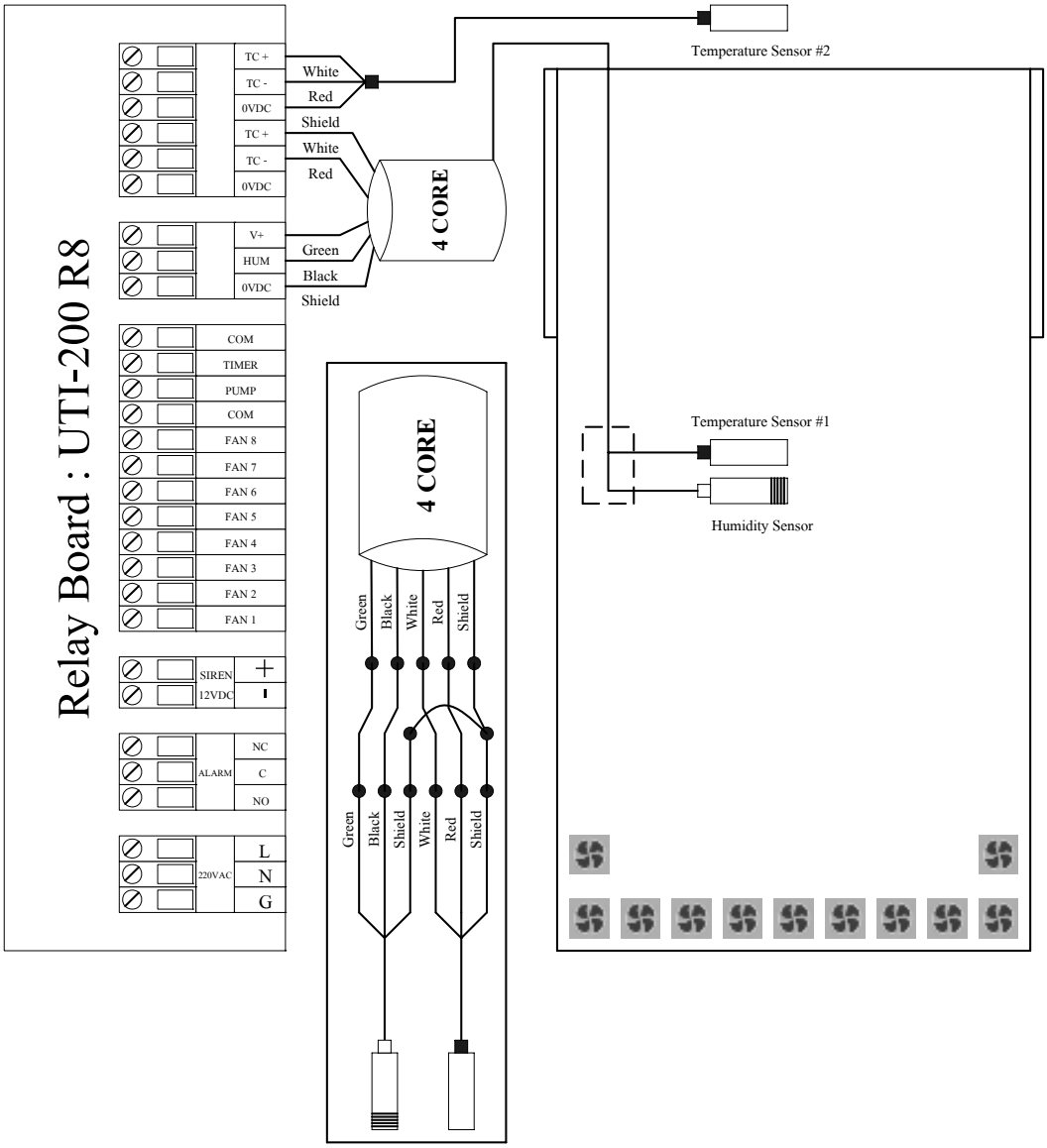
Before Installation

- For safety, always connect UTI-200R8 through breaker switches and always with ground wiring
- Electrical wire should be at least 1mm in diameter
- Choose suitable magnetic contactor size. Switch board panel should be of class IP56
- Signal wire should be shield wire with at least 0.34mm in diameter
- Shut-off the main breaker before installing or inspecting UTI-200R8 to prevent damage from electrical surge
- Do not expose humidity sensor to water

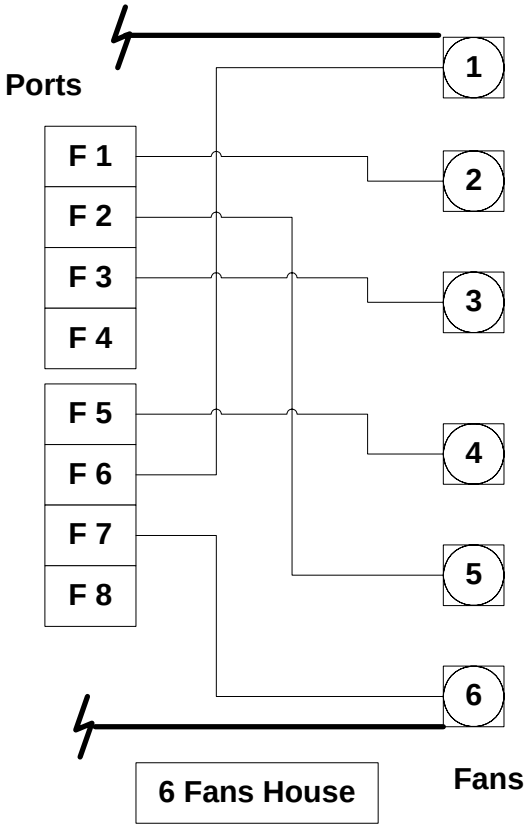
Electrical Diagram

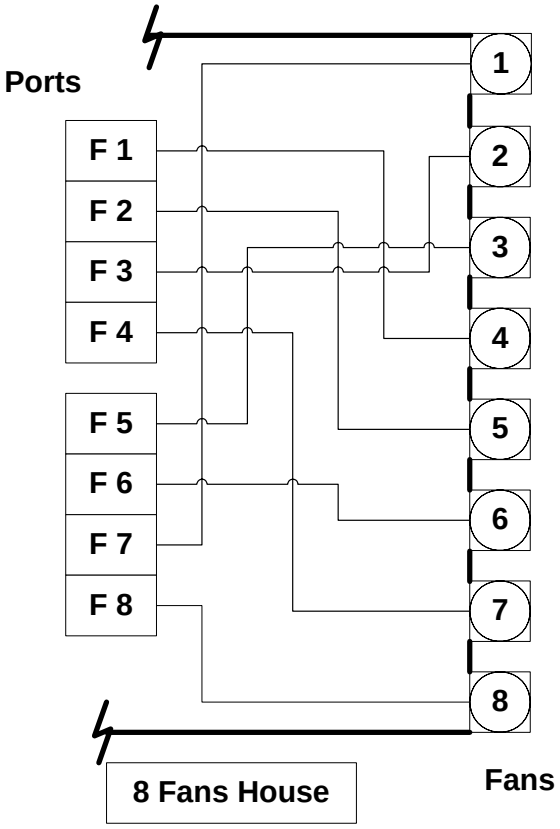


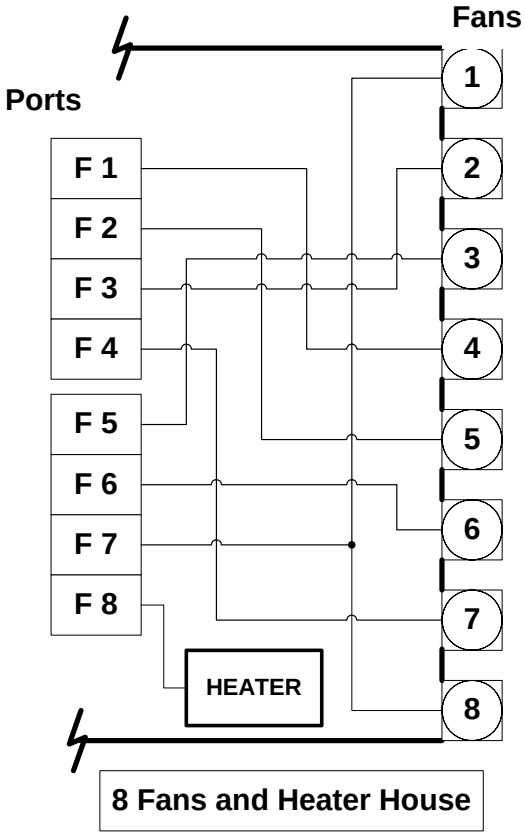
Sensors Connection/ Placement

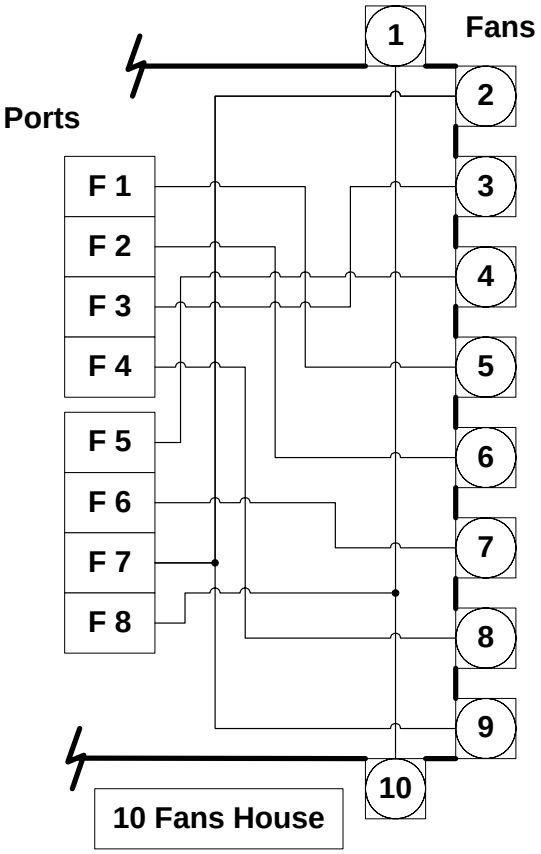


Sample of Port and Fan Connection

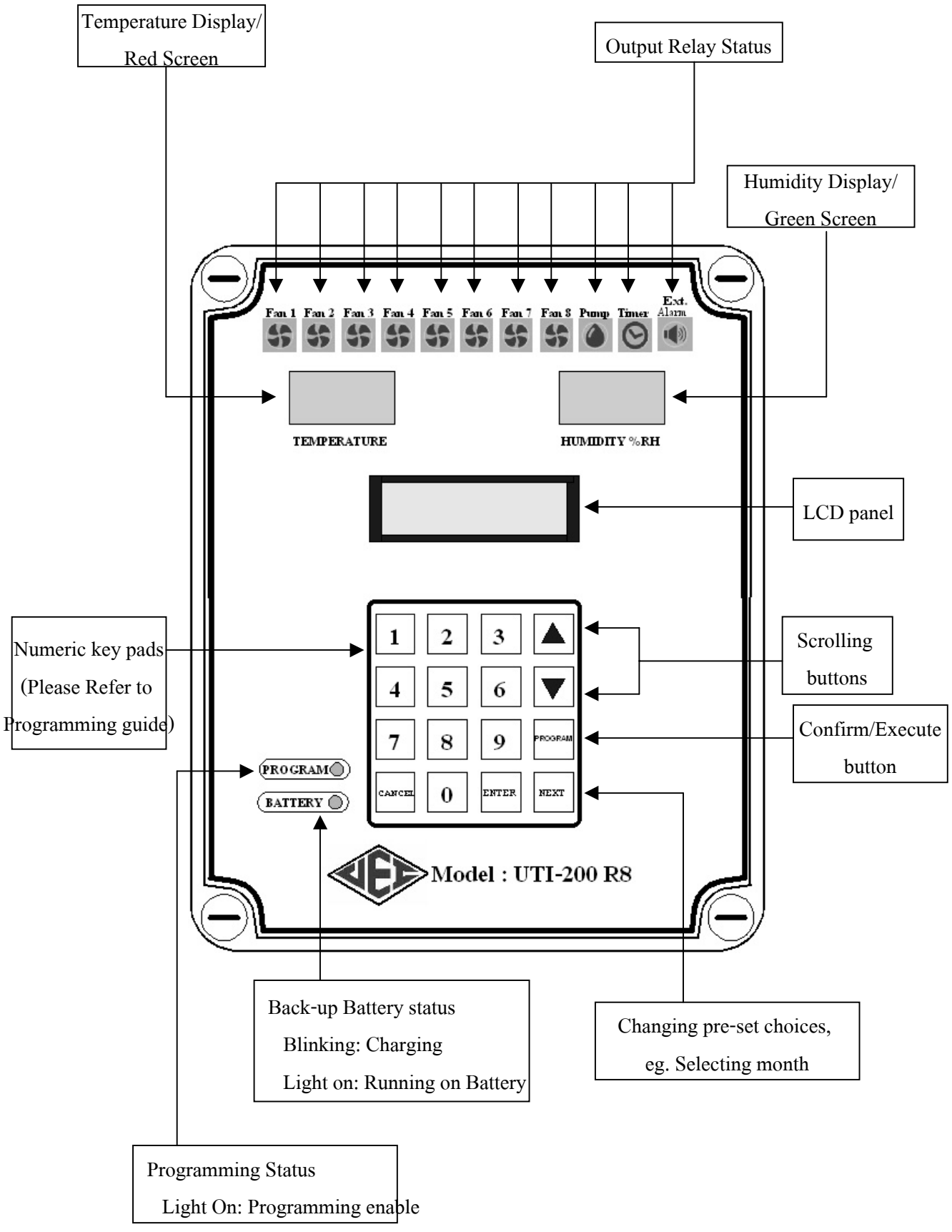








Overview of UTI-200R8 control panel



General Information

- The unit is set for automatic delayed after power failure (default is 3 seconds, can be programmed differently, function 7 → TIMER DELAY ON STATUS. Please refer to programming guide)
- Default universal password is "2519"
- Disable timer function (pulse mode). Set Time OFF = 0

Entering Data (refer to programming guide for complete list of functions)

1. Press number corresponded to the desired function then press "program"
   - 1 **Calibrate Sensor**
   - 2 **Time and Date**
   - 3 **Fan 1 – 4 Temperature control and Timer control (Pulse mode)**
   - 4 **Fan 5 – 8 Temperature control and Heat Stress control**
   - 5 **Cooling (Pump) control by Temperature/ humidity/ Timer (pulse)**
   - 6 **Timer (lighting) 8 steps per day**
   - 7 **Function Parameter Set**
   - 8 **Display Record Data / Print Record Data**
   - 9 **Display Record MIN / MAX Value, Print Record MIN/MAX Value**
   - 0 **Select Display ^{o}F or ^{o}C**
   - NEXT **Display growth day and current mode**
2. use Δ or ∇ to scroll to the desired sub functions then press "program".
3. Enter new value using numeric key pad then press "program" or "enter" to confirm the new value.
4. For pre-set choices, e.g. month, use "next" to scroll to the desired value.
5. Press "cancel" should you do not wish to enter the new value.

Setting new Password

1. Press "7" → "program"
2. Use up and down key pad to scroll to "MODE PASSWORD SETUP" → press program
3. Enter old password or universal password "2519"
4. Enter new password

Self-Test Programming

1. Press "7" → "program"
2. Press up or down to scroll to "TEST OUTPUT RELAY CONTROL" → press "program"
3. Enter password
4. The unit will test all the output relay channels and also charging system for back-up battery
5. Should any relay fail to perform, please contact us for more details.

Fan Setting Guide

1. Last fan port should be set to open below 28°C-30°C. Work your way backward with setting difference between 1.0°C-1.5°C between port. "Difference Temperature (DT CLOSE)" for each port should be set at 0.5-1.0°C

   Example: FAN8 = 28°C, each port differs 1.0°C and "Difference Temperature" set at 0.5°C. Therefore, FAN8 will open at 28°C, FAN7 will open at 27°C, FAN6 will open at 26°C,…FAN1 will open at 21°C

   FAN8 will close at 27.5°C, FAN7 will close at 26.5°C,…, FAN1 will close at 20.5°C
2. FAN1-4 should be used for temperature below 25°C and should be use in conjunction with pulse mode to prevent suffocating by providing minimum ventilation at pre-set interval. If the setting is only based on temperature, at lower temperature there might be too little number of fan working.

   Example: FAN4 set TEMP OPEN at 24°C, "Temperature difference (DT CLOSE)" at 0.5°C. Without pulse setting, FAN4 will close if temperature is below 23.5°C

   If VEN PULSE F4 T ON = 3 minutes, set VEN PULSE F4 T OFF = 5 minutes, set TEMP CLOSE at 16°C

   Even the temperature falls below 23.5°C, FAN4 will open for 3 minutes and close for 5 minutes to provide minimum ventilation. The fan will only close completely if temperature falls below 16°C.

   Note: Set TOFF = 0 to deactivate pulse mode
3. FAN5-8 should be used for temperature above 25°C in conjunction with Heat Stress Index (HSI) control. This is to prevent stress out caused by low temperature but high humidity. HSI control will keep the fan running if HSI is higher than the set point even the temperature is lower than the set point.

   Example: set TEMP OPEN at 27oC, DT CLOSE at 0.5°C and HS.OPEN = 170, DHS.CLOSE = 2. When temperature falls below 26.5°C (79.7°F), fan will stop but if the relative humidity rises over 90.3%RH which causes HSI Index to go up to 170, fan will open.

HEAT STRESS INDEX TABLE

Temperature		Relative Humidity (%RH)								
°C	°F	60	65	70	75	80	85	90	95	99
15.6	60	120	125	130	135	140	145	150	155	159
18.3	65	125	130	135	140	145	150	155	160	164
21.1	70	130	135	140	145	150	155	160	165	169
23.9	75	135	140	145	150	155	160	165	170	174
26.7	80	140	145	150	155	160	165	170	175	179
29.4	85	145	150	155	160	165	170	175	180	184
32.2	90	150	155	160	165	170	175	180	185	189
35.0	95	155	160	165	170	175	180	185	190	194

Pump Setting Guide

There are two options for PUMP control

Option1: Controlled by Temperature and Humidity

Option2: Controlled by Temperature and timer

Option1 (Temperature and Humidity control) is suitable for most case especially in hot and humid climate.

1.1. Set MODE CTRL HUM. in Function Parameter Set [7] to 1. USE HUMIDITY. Pump function will be controlled by temperature sensor and humidity sensor.

1.2. Temperature to start pump (T OPEN PUMP) should be set at equal or higher than TEMP OPEN F8.

1.3. DIFF T. CLOSE PUMP should be set at 0.5°C-1°C

1.4. HIGH H CLOSE PUMP should be set at 80-85%RH and LOW H OPEN PUMP should be set at 70-75%RH. The difference %RH between pump activation and stop should be at least 5%RH

Example: Set T OPEN PUMP at 28°C, DIFF T. CLOSE PUMP 1.0°C, HIGH H CLOSE PUMP 85%RH, LOW H OPEN PUMP 80%RH.

When temperature goes up to 28°C, pump will open and evaporative cooling will reduce temperature and increase %RH at the same time. When %RH reaches 85%, pump will stop and reactivate again when %RH falls below 80%RH. Pump will stop if temperature goes down below 27°C

Option2 (Temperature and Timer control) is suitable ONLY for hot and dry climate where there is the need to save water. User should have a good understanding of how evaporative cooling system works since this option will not consider reading from humidity sensor in controlling pump. Therefore, it cannot avoid the situation of high temperature and high humidity which could cause HSI to go up beyond desirable level.

1.1. Set MODE CTRL HUM. in Function Parameter Set [7] to 2. NOT USE HUMIDITY. Pump function will be controlled only by temperature sensor.

1.2. Temperature to start pump (T OPEN PUMP) should be set at equal or higher than TEMP OPEN F8.

1.3. DIFF T. CLOSE PUMP should be set at 0.5°C-2.0°C

1.4. PUMP T PULSE T ON and PUMP T PULSE T OFF should be set according to the local condition by allowing enough pump operating time to moisten the evaporative cooling panel thoroughly

Example: set T OPEN PUMP 28°C, DIFF T. CLOSE PUMP 1.0°C, PUMP T PULSE T ON = 3 minutes, PUMP T PULSE T OFF = 5 minutes

When temperature rises to 28°C, pump will be on for 3 minutes and off for 5 minutes and then on again according to pre-set interval. Pump will be closed when temperature falls below 27°C

Note: To deactivate pulse function, set PUMP T PULSE T OFF = 0

T-curve Setting Guide

T-curve setting enables the controller to perform differently according to the rearing period. This program is suitable with "All In All Out process" such as Poultry Broiler, Poultry Layer, Poultry Breeder, Swine etc.

1. press [3] to select function control Fan 1-4
2. press Δ or ∇ for STATUS T-CURVE
3. press "PROGRAM" and press "1" choose USE T-CURVE
4. Input beginning age for each stage. ST1 always start with "0". ST2 must have age value greater than ST1. ST3 must have age value greater than ST2…etc. Any latter stage that has age value smaller than the previous stage will be ignored. For any stage not in use, input "0"

   Example 1: Poultry Broiler 45 days. 2 rearing periods. First period from 0 to 21 daysold. Second period from 22 to 45 daysold. Use the following inputs.

   ST1 AGE GROWTH = 0

   ST2 AGE GROWTH = 22

   ST3 to ST8 = 0

   Example2: Poultry Breeder. 3 rearing periods. First period 4 weeks. Second period up to 10 weeks. Final period up to 68 weeks. Use the following inputs

ST1 AGE GROWTH = 0

ST2 AGE GROWTH = 29 days

ST3 AGE GROWTH = 70 days

ST4 to ST8 = 0

5. There will be new parameters for each ST in Function Control Fan 1-4, Function Control Fan 5-8 and Function Control Pump and Alarm. ST AGE GROWTH will only need to be input once.
6. Check actual age by pressing "NEXT" and Δ or ∇ for "AGE GROWTH DAY". It will start counting from the date input the program. To reset the value for starting the new flock, press "PROGRAM" and enter the value of AGE GROWTH DAY = 0

Note: To deactivate T-curve function,

1. press **3** to select function control Fan 1-4
2. press Δ or ∇ for STATUS T-CURVE
3. press "PROGRAM" and press "2" choose NOT USE T-CURVE

Programming Guide

Button 1 "Calibrate Sensor" function [press ΔV for following options]

Message LCD	Description	Unit	Instruction
TEMP. SENSOR 1	Temperature reading from Temp. Sensor # 1	° C	Press "Program" → enter password → LCD shows "CALIBRATE TEMP.1"
CALIBRATE TEMP.1	Calibrate Temp. Sensor # 1	° C	Input value then press "program" to enter the newly calibrated value
TEMP. SENSOR 2	Temperature reading from Temp. Sensor # 2	° C	Press "Program" → enter password → LCD shows "CALIBRATE TEMP.2"
CALIBRATE TEMP.2	Calibrate Temp. Sensor # 2	° C	Input value then press "program" to enter the newly calibrated value
HUMIDITY SENSOR	%RH reading from Humidity Sensor	%R H	Press "Program" → enter password → LCD shows "CALIBRATE HUM."
CALIBRATE HUM.	Calibrate Humidity Sensor	%R H	Input value then press "program" to enter the newly calibrated value

Button 2 "Time and date" Function [press ΔV for following options]

Message LCD	Description	Unit	Instruction
TIME CURRENT	Show current time and date		Press "program" → LCD shows "SETUP CLOCK"
SETUP CLOCK	Set up new date and time		Input value, use up down button to move cursor then press "program" to enter the newly calibrated value

Button 3 Function Control Fan 1 – 4[press ΔV for following options]

Message LCD	Description	Unit	Instruction
STATUS T-CURVE	Activate or deactivate T-curve function (customized control for each rearing periods)		Press "PROGRAM" and "1" USE T-CURVE to activate this function (ST1 through ST8 will be available for other parameter settings) "2" NOT USE T-CURVE to deactivate this function (only ST1 will be available)
ST1 AGE GROWTH	Age (day) to begin first rearing stage	DAY	Press "PROGRAM" to set beginning age for each rearing stage. ST1 always set = 0 Value for the following stage must be larger than the previous stage (ST2>ST1, ST3>ST2…etc.) If value of the following stage is smaller than the previous stage, the programming on that stage will be ignored). For unused stage, enter value = 0
ST1 TEMP. OPEN F 1	Temperature that triggers Fan 1 operation	º C	Press "Program" to enter new value
ST1 TEMP. OPEN F 2	Temperature that triggers Fan 2 operation	º C	Press "Program" to enter new value
ST1 TEMP. OPEN F 3	Temperature that triggers Fan 3 operation	º C	Press "Program" to enter new value
ST1 TEMP. OPEN F 4	Temperature that triggers Fan 4 operation	º C	Press "Program" to enter new value
ST1 DT CLOSE F 1	Temp. diff. (from open temp) That will close Fan 1 and enter pulse mode	º C	Press "Program" to enter new value
ST1 DT CLOSE F 2	Temp. diff. (from open temp) That will close Fan 2 and enter pulse mode	º C	Press "Program" to enter new value

Button 3 Function Control Fan 1 – 4[press ΔV for following options] Con't

Message LCD	Description	Unit	Instruction
ST1 DT CLOSE F 3	Temp. diff. (from open temp) That will close Fan 3 and enter pulse mode	º C	Press "Program" to enter new value
ST1 DT CLOSE F 4	Temp. diff. (from open temp) That will close Fan 4 and enter pulse mode	º C	Press "Program" to enter new value
ST1 VEN PULSE F 1 TON	Pulse mode for Fan 1 (duration fan 1 on)	Min	Press "Program" to enter new value, ON= duration Fan 1 on
ST1 VEN PULSE F 2 TON	Pulse mode for Fan 2 (duration fan 2 on)	Min	Press "Program" to enter new value, ON= duration Fan 2 on
ST1 VEN PULSE F 3 TON	Pulse mode for Fan 3 (duration fan 3 on)	Min	Press "Program" to enter new value, ON= duration Fan 3 on
ST1 VEN PULSE F 4 TON	Pulse mode for Fan 4 (duration fan 4 on)	Min	Press "Program" to enter new value, ON= duration Fan 4 on
ST1 VEN PULSE F 1 TOFF	Pulse mode for Fan 1 (duration fan 1 off)	Min	Press "Program" to enter new value, OFF= duration Fan 1 off, enter "0" to cancel pulse mode
ST1 VEN PULSE F 2 TOFF	Pulse mode for Fan 2 (duration fan 2 off)	Min	Press "Program" to enter new value, OFF= duration Fan 2 off, enter "0" to cancel pulse mode
ST1 VEN PULSE F 3 TOFF	Pulse mode for Fan 2 (duration fan 3 off)	Min	Press "Program" to enter new value, OFF= duration Fan 3 off, enter "0" to cancel pulse mode
ST1 VEN PULSE F 4 TOFF	Pulse mode for Fan 2 (duration fan 4 off)	Min	Press "Program" to enter new value, OFF= duration Fan 4 off, enter "0" to cancel pulse mode
ST1 TEMP CLOS F1	Min. temp to shut down fan 1	º C	Press "Program" to enter new value
ST1 TEMP CLOS F2	Min. temp to shut down fan 2	º C	Press "Program" to enter new value
ST1 TEMP CLOS F3	Min. temp to shut down fan 3	º C	Press "Program" to enter new value
ST1 TEMP CLOS F4	Min. temp to shut down fan 4	º C	Press "Program" to enter new value

Button 4 Function Control Fan 5 – 8[press ΔV for following options]

Message LCD	Description	Unit	Instruction
ST TEMP OPEN F 5	Temperature that triggers Fan 5 operation	º C	Press "Program" to enter new value
ST TEMP OPEN F 6	Temperature that triggers Fan 6 operation	º C	Press "Program" to enter new value
ST TEMP OPEN F 7	Temperature that triggers Fan 7 operation	º C	Press "Program" to enter new value
ST TEMP OPEN F 8	Temperature that triggers Fan 8 operation	º C	Press "Program" to enter new value
ST1 DT CLOSE F 5	Temp. diff. (from open temp) That will close Fan 5	º C	Press "Program" to enter new value
ST1 DT CLOSE F 6	Temp. diff. (from open temp) That will close Fan 6	º C	Press "Program" to enter new value
ST1 DT CLOSE F 7	Temp. diff. (from open temp) That will close Fan 7	º C	Press "Program" to enter new value
ST1 DT CLOSE F 8	Temp. diff. (from open temp) That will close Fan 8	º C	Press "Program" to enter new value
ST1 HS.OPEN F5	Heat Stress value that triggers fan 5		Press "Program" to enter new value
ST1 HS.OPEN F6	Heat Stress value that triggers fan 6		Press "Program" to enter new value
ST1 HS.OPEN F7	Heat Stress value that triggers fan 7		Press "Program" to enter new value
ST1 HS.OPEN F8	Heat Stress value that triggers fan 8		Press "Program" to enter new value
ST1 DHS.CLOSE F5	Heat Stress diff. To close fan 5		Press "Program" to enter new value
ST1 DHS.CLOSE F6	Heat Stress diff. To close fan 6		Press "Program" to enter new value
ST1 DHS.CLOSE F7	Heat Stress diff. To close fan 7		Press "Program" to enter new value
ST1 DHS.CLOSE F8	Heat Stress diff. To close fan 8		Press "Program" to enter new value

Button 5 Function Control pump and alarm [press ΔV for following options]

Message LCD	Description	Unit	Instruction
ST1 T OPEN PUMP	Temperature that triggers pump	º C	Press "Program" to enter new value
ST1 DIFF T.CLOSE PUMP	Temp. diff to shutdown pump	º C	Press "Program" to enter new value
ST1 PUMP T PULSE T ON	Pulse mode for pump, on = duration of pump in operation	Min	Press "Program" to enter new value, ON= duration of pump in operation
ST1 PUMP T PULSE T OFF	Pulse mode for pump, off = duration of pump stop operation	Min	Press "Program" to enter new value, OFF= duration of pump stop (enter "0" to cancel pulse mode)
ST1 HIGH H CLOSE PUMP	%RH to stop pump	%RH	Press "Program" to enter new value
ST1 LOW H OPEN PUMP	%RH to operate pump	%RH	Press "Program" to enter new value
HIGH TEMP. ALARM	Temp to activate high temp alarm	º C	Press "Program" to enter new value
LOW TEMPE. ALARM	Temp to activate low temp alarm	º C	Press "Program" to enter new value
TIME ON SIREN	Duration alarm ON	Sec	Press "Program" to enter new value
TIME OFF SIREN	Duration alarm OFF	Sec	Press "Program" to enter new value

Button 6 Function Pre-set Timer [press ΔV for following options]

Message LCD	Description	Unit	Instruction
TIMER PORT ON 1	Time step 1 ON		Press "Program" to enter new value
TIMER PORT OFF 1	Time step 1 OFF		Press "Program" to enter new value
TIMER PORT ON 2	Time step 2 ON		Press "Program" to enter new value
TIMER PORT OFF 2	Time step 2 OFF		Press "Program" to enter new value
TIMER PORT ON 3	Time step 3 ON		Press "Program" to enter new value
TIMER PORT OFF 3	Time step 3 OFF		Press "Program" to enter new value
TIMER PORT ON 4	Time step 4 ON		Press "Program" to enter new value
TIMER PORT OFF 4	Time step 4 OFF		Press "Program" to enter new value
TIMER PORT ON 5	Time step 5 ON		Press "Program" to enter new value
TIMER PORT OFF 5	Time step 5 OFF		Press "Program" to enter new value
TIMER PORT ON 6	Time step 6 ON		Press "Program" to enter new value
TIMER PORT OFF 6	Time step 6 OFF		Press "Program" to enter new value
TIMER PORT ON 7	Time step 7 ON		Press "Program" to enter new value
TIMER PORT OFF 7	Time step 7 OFF		Press "Program" to enter new value
TIMER PORT ON 8	Time step 8 ON		Press "Program" to enter new value
TIMER PORT OFF 8	Time step 8 OFF		Press "Program" to enter new value

Note

1) Timer will be operated according to time scale 0:01 hr – 24:00 hour per day . Do not set overlapping clock in any step
2) To switch off function in any step, enter "0:00" value
3) Incremental of time = 10 minutes. For example, 01.3 means 01:30 hour

Button 7 Parameter Setting [press ΔV for following options]

Message LCD	Description	Unit	Instruction
ID CONTROLLER NUMBER	ID for the unit		Press "Program" to enter new value (ONLY need to set this for centralized computer control)
MODE CTRL TEMP	Temperature control mode		Press "Program" to enter new value 1 Temp. Sensor1 = Control based on Temp. Sensor 1 only 2 Temp. AV Sen 1&2 = Control based on average value of Temp. Sensor 1 and 2
MODE CTRL HUM.	Humidity control mode		Press "Program" to enter new value 1 USE HUMIDITY= Use humidity sensor to control cooling operation (as per setting HIGH HUM. CLOSE PUMP and LOW HUM. OPEN PUMP) 2 NOT USE HUM. = Do not use humidity sensor to control cooling operation
TIMER DELAY ON STATUS	Delay timer for operating after power failure	sec	Press "Program" to enter new value (3-180 sec)
HEAT STRESS INDEX	Heat Stress Index start to be recorded and trigger the alarm (Heat Stress Index = ° F + %RH)		Press "Program" to enter new value (recommended setting = 168-170)
TIME RECORD HS. INDEX	Time duration of continuous Heat Stress that will be recorded as Heat Stress into the unit's memory	Min	Press "Program" to enter new value
TIME ALARM HS. INDEX	Time duration of continuous Heat Stress that will trigger the alarm	Min	Press "Program" to enter new value
DOWN OR UPLOAD PARAMETER SET	Up-Load / Down-Load parameter setting from and to the units		Required accessories (please contact us for more details)
TEST OUTPUT RELAY CONTROL	Self diagnostic program for all relays		Press "Program" to enter password. Self diagnostic program will start automatically

Button 7 Parameter Setting [press ΔV for following options] Con't

Message LCD	Description	Unit	Instruction
MODE PASSWORD SETUP	Set up new password		Press "Program", enter old password and then set new password
MODE FUNC. FAN1	Select Control mode for Fan 1		Press "Program" to enter new value 1 FAN 1 STAND BY = Fan 1 will operate continuously for minimum ventilation regardless of setting 2 FAN 1 AUTO = Fan 1 will operate only when there is malfunction on UTI controller
MODE FUNC. FAN8	Set control mode for Fan 8		Press "Program" to enter new value 1 MODE FAN to use this port as fan. Port will be activated when temperature is higher than the set point and stop when temperature is below the set point 2 MODE HEATER to use this port as heater. Port will be activated when temperature is lower than the set point and stop when temperature is higher than the set point

Button 8 Display recorded data/ Print recorded data [press ΔV for following options]

Message LCD	Description	Unit	Instruction
MODE DISPLAY RECORD DATA	Display recorded data		Press "Program" Mode Record Data ▲ or ▼ shows LCD "DISPLAY ALL DISP.RECORD DATA" ▲ or ▼ shows LCD "GET DATE TIME DISP.RECORD DATA"
DISPLAY ALL DISP.RECORD DATA	Shows all Recorded Data: Upper-left of LCD shows date, Lower-left of LCD shows %RH, Upper-right of LCD shows Temp. from sensor #1, Lower-right shows Temp. from sensor #2. Red screen shows hours of time recorded, Green screen shows minute of time recorded		▲ or ▼ for next record. Press "cancel" or "enter" or "program" to exit this screen
GET DATE TIME DISP.RECORD DATA	Search for data recorded in specified date and time		Input date and time then press "program"

Button 9 Function Display Record MIN / MAX Value and Print Record MIN/MAX Value[press ΔV for following options] (see **Recorded MIN/MAX value table for reference)**

Message LCD	Description	Unit	Instruction
MODE DISPLAY MIN/MAX. VALUE	Show Recorded MIN/MAX Value (refer to min/max table)		Press "Program" Mode Record Data ▲ or ▼ shows LCD "DISPLAY ALL MIN/MAX. VALUE" ▲ or ▼ shows LCD "GET DATE MONTH MIN/MAX. VALUE"
DISPLAY ALL MIN/MAX. VALUE	Show all Recorded MIN/MAX Value		▲ or ▼ for next record. Press "cancel" or "enter" or "program" to exit this screen
GET DATE MONTH MIN/MAX. VALUE	Search for Recorded MIN/MAX Value at specific date and month		Input date and month then press "program"

****Recorded MIN/MAX Value Table****

Message LCD	Description	Unit	Instruction
MAXIMUM TEMP.1	Max. daily temperature (Temp sensor #1) Red screen shows hour of day, Green screen shows minute of the day	º C	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
MINIMUM TEMP.1	Min. daily temperature (Temp sensor #1) Red screen shows hour of day, Green screen shows minute of the day	º C	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
MAXIMUM HUM.	Max. daily humidity Red screen shows hour of day, Green screen shows minute of the day	%RH	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
MINIMUM HUM.	Min. daily humidity Red screen shows hour of day, Green screen shows minute of the day	%RH	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
MAXIMUM TEMP.2	Max. daily temperature (Temp sensor #2) Red screen shows hour of day, Green screen shows minute of the day	º C	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
MINIMUM TEMP.2	Min. daily temperature (Temp sensor #2) Red screen shows hour of day, Green screen shows minute of the day	º C	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
NUMBER ALARM HS.	Number of Heat Stress happening during the day (as pre-set in Function # 6, parameter set, TIME ALARM HS. INDEX)		▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen

****Recorded MIN/MAX Value Table** Con't**

Message LCD	Description	Unit	Instruction
TIME ALL HS.	Duration of longest Heat Stress. Red screen shows hour of day, Green screen shows minute of the day when it happened	Min.	▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen
MAXIMUM HS.	Max. Heat Stress. Red screen shows hour of day, Green screen shows minute of the day when it happened		▲ or ▼ to show next record. Press "Cancel", "Enter", "Program" to exit screen

Button 0 Function Select Display

Message LCD	Description	Unit	Instruction
DEGREE TEMP.	Choose whether to show temperature in Celsius or Fahrenheit	º C or º F	▲ or ▼ "1.CELSIUS DEG" "2.FAHLENHEIT DEG" Press "program"

Button "NEXT" display growth day and current mode

Message LCD	Description	Unit	Instruction
AGE GROWTH DAY _ _ _ DAY	Show age growth since last programming or last reset	Day	Press "Program" to change the data To reset and start over for new flock, enter value = 0

Alarm setting guide

For Poultry Broiler 0-21days:

Button "5": Low temp alarm should be set at 18-20^{o}C. High temp alarm should be set at 37-39^{o}C

For Poultry Broiler 22 days onward:

Button "5": Low temp alarm should be set at 10-12^{o}C. High temp alarm should be set at 33-35^{o}C

Button "7", HEAT STRESS INDEX alarm should be set at 168-170*

Note: Should take into account ambient environment, type of animals for establishing alarm setting parameters

Example of control setting for Broiler houses

(For Tropical climate)

1-21 days-old chick

Fan #	PORT	TEMP OPEN F (°C)	DIFF. TEMP CLOSE PF (°C)	TON/ TOFF	TEMP CLOSE F (°C)	HSI
1	F7	34	1.0			170
2	F3	30	0.5	2/5	22	
3	F5	32	1.0			170
4	F1	28	0.5	2/5	20	
5	F2	29	0.5	2/5	21	
6	F6	33	1.0			170
7	F4	31	0.5	2/5	23	
8	F8	35	1.0			170

22 days-old chick onward

Fan #	PORT	TEMP OPEN F (°C)	DIFF. TEMP CLOSE PF (°C)	TON/ TOFF	TEMP CLOSE F (°C)	HSI
1	F7	27	1.0			170
2	F3	23	0.5	3/5	15	
3	F5	25	1.0			170
4	F1	21	0.5	3/5	13	
5	F2	22	0.5	3/5	14	
6	F6	26	1.0			170
7	F4	24	0.5	3/5	16	
8	F8	28	1.0			170

Cooling Setting:

TEMP.OPEN PUMP = 27 - 28 °C

HIGH HUM. CLOSE PUMP = 80-85%RH

LOW HUM. OPEN PUMP = 75-80%RH

PUMP TEMP. PLUSE TOFF = 0 (disable pulse mode)

Alarm Setting:

HIGH TEMP. ALARM = 32-34°C

LOW TEMP ALARM = 10-12°C

HEAT STRESS INDEX = 168-170